

**ABSTRACT OF THE DISCLOSURE**

A radio communication system for quickly selecting an optimum transmission mode in accordance with the quality and situation of a propagation path is provided. The system comprises first and second radio communication apparatuses capable of radio-communicating with each other. The first radio communication apparatus comprises a propagation path environment estimator for outputting the estimation result as propagation path environment information, a propagation path quality estimator for outputting the estimation result as propagation path quality, and a transmitter for transmitting both the informations to the second radio communication apparatus. The second radio communication apparatus comprises a transmission mode selector for selecting one of the transmission modes used for communicating with the first radio communication.